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Drosophila Survey of Hokkaido

XI. A New Species of *Drosophila* (*Sophophora*) from Japan

With 5 Text-figures

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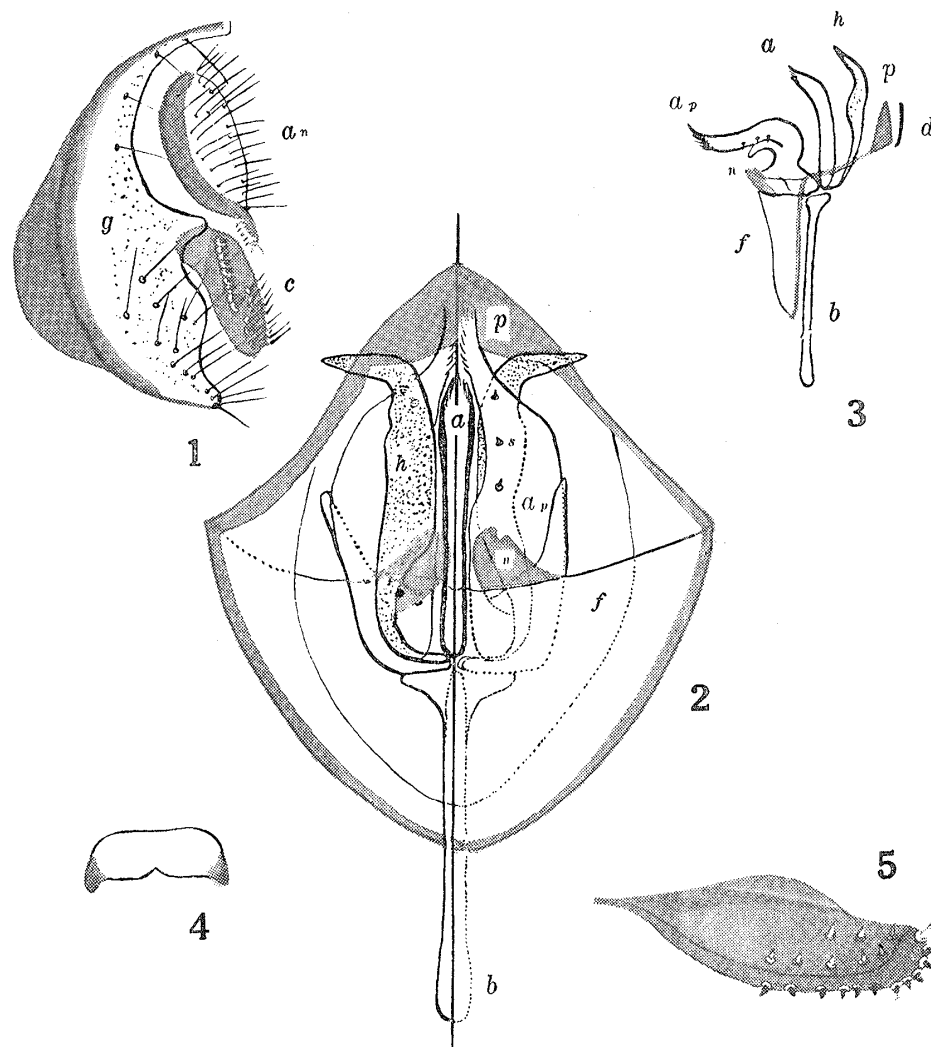
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(Communicated by S. MAKINO)

During a period from August 30 to September 4, 1959, collections of drosophilid flies were made with the use of small containers which were baited with fermenting banana, and sometimes by net sweeping on various kinds of plants in Taisei-Mura (42°13'N., 139°51'E.), Hiyama, Hokkaido, by Mrs. Yasuko Toyofuku. A total of 972 specimens was collected by her; they comprised the following 23 species: *Scaptomyza pallida* (Zetterstedt), *Drosophila* sp. of *fenestrarum* group (= *Scaptomyza apicalis* of Okada, nec Hardy), *D. (Hirtodrosophila) alboralis* Momma and Takada, *D. (H.) histrioides* Okada and Kurokawa, *D. (Paradrosophila) coracina* Kikkawa and Peng, *D. (Dorsilopha) busckii* Coquillett, *D. (Sophophora) bifasciata* Pomini, *D. (S.) suzukii* (Matsumura), *D. (S.) lutea* Kikkawa and Peng, *D. (S.) nipponica* Kikkawa and Peng, *D. (S.) auraria* Peng, race A, race B, race C, *D. (Drosophila) brachynephros* Okada, *D. (D.) unispina* Okada, *D. (D.) nigromaculata* Kikkawa and Peng, *D. (D.) testacea* van Roser, *D. (D.) histrio* Meigen, *D. (D.) tenuicauda* Okada, *D. (D.) funebris* (Fabricius), *D. (D.) immigrans* Sturtevant, *D. (D.) virilis* Sturtevant, *D. (D.) lacertosa* Okada, *D. (D.) okadai* Takada and a species which seemed to be new to science.

The species referred to here as a new species was previously found by Okada (1956) in his collections; only female specimens had been obtained in Tokyo. In the present collection, nine males and three females of this species were obtained in Taisei-Mura. It is therefore apparent that this species is distributed from the central part of Honshu to the southern part of Hokkaido. The present paper deals with the description of this new species, which is named *D. mommai* in honour of Dr. Eizi Momma, Assistant Professor at Hokkaido University.

The authors wish to offer their sincere thanks to Mrs. Yasuko Toyofuku, Hokkaido University, for her kind provision of the specimens for the present study. Further, they are grateful to Professor Sajirô Makino, Hokkaido University, for his guidance in carrying out the present study, and to Dr. Eizi Momma for his invaluable suggestions. Cordial thanks are also due to Professor Daigoro Moriwaki, Tokyo Metropolitan University, for his important advice.



Figs. 1-5. *Drosophila (Sophophora) mommai* sp. nov.

1. Periphallallic organs (lateral aspect). 2. Phallic organs (left half dorsal and right half ventral aspects). 3. Phallic organs (lateral aspect). 4. Decasternum of male phallic organs (ventral aspect). 5. Egg-guide (lateral aspect).

a, aedeagus. *an*, anal plate. *ap*, anterior paramere. *b*, basal apodeme of aedeagus. *c*, primary clasper. *d*, decasternum. *f*, ventral fragma. *g*, genital arch. *h*, hook-like process present at the lateral side of aedeagus. *n*, no asternum. *p*, posterior paramere. *s*, sensilla of anterior paramere.

Drosophila (Sophophora) mommai sp. nov. (Figs. 1-5)

Drosophila (Sophophora) sp. like *magnipunctata* Okada, 1956. Systematic study of Drosophilidae and allied families of Japan. 115.

Japanese name: Semaru-shôjôbae (nov.), Nise-ôgushi-shôjôbae (Okada, 1956).

Male and female: Body dark brown, about 2.5 mm in length. Antenna yellowish brown, arista with about 10 branches including a rather small fork, two or three below it. Eye dark red, with red piles. Palpus dark brown, with only one prominent apical bristle. Ocellar triangle and periorbits reddish brown. Front black, bare, about half as broad as the head width. Carina black, low and narrow but wider below. Clypeus blackish brown. Cheeks brown, about 1/3 as broad as the greatest diameter of eye. Second oral about 1/3 as long as vibrissa. Proclinate orbital about 2/3 as long as posterior reclinate. Anterior reclinate about 1/4 length of posterior reclinate and 1/3 length of proclinate, situated twice nearer to proclinate than to posterior reclinate. Mesonotum brownish black, highly convex. Scutellum brownish black. Acrostichal hairs in 6 somewhat irregular rows. Thoracic pleura brownish black. Humerals 2, lower one longer. Posterior dorsocentrals longer than the anterior ones; cross distance of dorsocentrals about 2.5 times the length distance. Anterior scutellars divergent. Posterior scutellars short and upright. Sterno-index about 0.3–0.5.

Legs yellow, coxae pale. Preapicals on all three tibiae. Apicals on middle. Fore tarsus having no sex-comb in male. Halteres white. Wings slightly fuscous, veins yellow. Costal-index about 3.2; 4V-index about 1.4; 4c-index about 0.7; 5x-index about 1.7. 1st costal section with 2 apical bristles, 3rd costal section with heavy bristles on its basal about 1/3.

Abdominal tergites entirely black, except for 1st tergite which is dark brown. Sternites dark brown.

Periphallic organs (Fig. 1): Genital arch (*g*) brown, darker at margin, narrow above, somewhat triangularly projected at lower tip; upper margin with about 4 hairs, lower with about 15 hairs. Clasper (*c*) brown, oblong, with about 9 black teeth arranged in a straight row, which does not reach the lower tip of clasper. Inner surface of clasper setigerous, with about 12 black bristles. Anal plate (*an*) separated from genital arch, yellow, darker at side of genital arch, sprindle-shaped, with about 25 long hairs, and ventroapically with about 6 yellowish bristles. Decasternum (Fig. 4) dark brown, trapezoid, with lower margin concaved.

Phallic organs (Figs. 2, 3): Aedeagus (*a*) pale brown, oblong, nearly straight, with numerous fibrous structures and apically rounded and hairy. Anterior paramere (*ap*) pale brown, curved ventrally, apically tapering and with a tuft of numerous hairs, medially with a curved horn-like process and with about 3 sensilla (*s*) arranged in a longitudinal row and basally broad and fused to novasternum (*n*). Posterior parameres (*p*) fused to become a plate and laterally connected to the long lateral arms of novasternum. A pair of elongate hook-like black process (*h*) present at the lateral sides of aedeagus, basally connected with the apodeme (*b*) of aedeagus. Phallosomal index about 0.8.

Egg-guides (Fig. 5): Lobe brown, under margin dark brown, apically rounded, medially swollen, upper margin convexed subapically, and with about 12 marginal black teeth and about 8 discal brownish bristles, ultimate marginal brownish tooth being longer than the penultimate one. Basal isthmus short and black.

Holotype: Male, Taisei-mura, Hiyama, Hokkaido, 3 IX '59; collected by Toyofuku.

Allotype: Female, collected together with holotype.

Paratypes: 7 ♂♂ and 2 ♀♀, collected together with holotype.

Previous records: Tokyo (Okada, 1956).

Type specimens: Deposited at the Zoological Institute, Faculty of Science, Hokkaido University.

Distribution: Hokkaido and Honshu, Japan.

Relationships: Although the present species has relatively small sterno-index, complete set of preapicals, separated anal plate, and distinct anterior paramere with sensilla, each being characteristic of the subgenus *Sophophora*, it does not agree with any of the known species-groups of this subgenus. The *fenestrarum* species-group has features coincident with those mentioned above, but it has only four rows of acrostichals, different from the present species which has six rows. The latter resembles also in general features the *nipponica* subgroup, especially *D. magnipectinata* Okada, of the *melanogaster* species-group, except in having no sex-combs in the male. Posterior branches of malpighian tubes of the present species are closely apposed at their tips, alike in the members of *nipponica* subgroup, different from the case of the other subgroups of the *melanogaster* group, and also alike in the *fenestrarum* group, at least as far as the Japanese species are concerned. Thus, the present species should be placed near the *melanogaster* group, especially the *nipponica* subgroup, and the *fenestrarum* group.